

1 CLAIM LISTING

2 1-27 Canceled

3 28. (Currently Amended) A clamping and/or braking device including:

- 4 (a) a base element, which is connected rigidly by means of at least two adjacent wall
5 sections to a force-applying element, by means of which the generated clamping
6 and/or braking forces can be transferred to an object,
- 7 (b) wherein the two or more adjacent wall sections define an essentially sealed
8 pressure chamber that can be pressurized with positive pressure or negative
9 pressure,
- 10 (c) wherein the two or more wall sections each have a bending region, which is
11 resistant to tensile force and nevertheless can be bent elastically so that the
12 bending regions form an elastic element between the base element and the
13 force-applying element,
- 14 (d) wherein in the unpressurized built-in state of the clamping and/or braking device,
15 the two or more wall sections exert a predetermined clamping and/or braking
16 force on the object by means of the force-applying element, and
- 17 (e) wherein the two or more wall sections and their bending regions are shaped and
18 dimensioned, so that from an initial position of the pressure chamber a first
19 pressure applied in the pressure chamber results in an increase in the curvature of
20 the bending regions and reduces the clamping and/or braking forces transferred by
21 the force-applying element to the object, or so that from the initial position of the
22 pressure chamber a second pressure applied in the pressure chamber results in a

1 decrease in the curvature of the bending regions and increases the clamping and/or
2 braking forces transferred by the force-applying element to the object and wherein
3 the second pressure is opposite to the first pressure;

4 (i) ~~so that when the pressure chamber is pressurized with positive pressure, as~~
5 ~~a result of an increase in the curvature of the bending regions, the~~
6 ~~clamping and/or braking forces that can be transferred by the~~
7 ~~force-applying element to the object are reduced or the force-applying~~
8 ~~element is moved in the direction away from the base element or when the~~
9 ~~pressure chamber is pressurized with negative pressure, as a result of~~
10 ~~decreasing the curvature of the bending regions, the clamping and/or~~
11 ~~braking forces that can be transferred by the force-applying element to the~~
12 ~~object are increased or the force-applying element is moved in the~~
13 ~~direction towards the base element, or~~

14 (ii) ~~so that in the reverse conditions, when the pressure chamber is pressurized~~
15 ~~with negative pressure, as a result of an increase in the curvature of the~~
16 ~~bending regions, the clamping and/or braking forces that can be transferred~~
17 ~~by the force-applying element to the object are reduced or the~~
18 ~~force-applying element is moved in the direction away from the base~~
19 ~~element or when the pressure chamber is pressurized with positive~~
20 ~~pressure, as a result of a decrease in the curvature of the bending regions,~~
21 ~~the clamping and/or braking forces that can be transferred by the~~

1 ~~force-applying element to the object are increased or the force-applying~~
2 ~~element is moved in the direction towards the base element.~~

3 (f) wherein the wall sections are formed as separate parts and have an attachment
4 region, with which the wall sections are connected in a pressure-tight way to the
5 force-applying element, or the attachment regions are formed such that they form
6 the force-applying element after they are connected to each other in a pressure-
7 tight way, and

8 (g) wherein the pressure chamber is sealed at the side regions of the wall sections by
9 means of lateral sealing elements, which are connected flush on the wall sections.

10
11 29. (Previously Presented) The device of claim 28 wherein the bending regions run
12 essentially parallel in the unpressurized state and preferably have a small spacing, which
13 lies in the range from 0.1 mm to 10 mm, preferably from 1 mm to 5 mm.

14
15 30. (Previously Presented) The device of claim 28 wherein the wall sections are formed as
16 separate parts and have an attachment region, with which the wall sections are connected,
17 preferably pressure-tight, to the base element, or the attachment regions are shaped, such
18 that they form the base part after being connected to each other, preferably in a
19 pressure-tight way.

20
21 31. (Previously Presented) The device of claim 30 wherein the wall sections each have an
22 attachment region bent at a right angle in the region of the base element and the

1 attachment regions are connected preferably in a pressure-tight way to a base element,
2 which runs essentially perpendicular to the bending regions and which preferably
3 comprises a retaining plate.
4

5 32. Canceled
6

7 33. (Currently Amended) The device of claim 28 wherein the ~~pressure chamber is sealed at~~
8 ~~the side regions of the wall sections by means of lateral sealing elements, which are~~
9 ~~connected flush on these wall sections and which preferably consist of~~ comprise plastic or
10 rubber.
11

12 34. (Previously Presented) The device of claim 30 wherein a spacing and/or sealing element
13 is inserted between the wall sections formed as separate parts in the region of the base
14 element and/or the force-applying element.
15

16 35. (Currently Amended) The device of claim[[s]] 33 further including a respective retaining
17 arm associated with each respective lateral sealing element, each retaining arm projecting
18 from the base element in the direction of the force-applying element or projecting from
19 the force-applying element in the direction of the base element, wherein each respective
20 retaining arm is located at a side of a respective lateral sealing element facing away from
21 the wall sections ~~wherein projecting from the base element or force-applying element, a~~
22 ~~retaining arm for the concerned lateral sealing element extends in the direction towards~~

1 ~~the force-applying element or the base element, wherein the lateral sealing element is~~
2 ~~arranged preferably between the lateral end surfaces of the wall sections and the retaining~~
3 ~~arm.~~

4
5 36. (Currently Amended) The device of claim 28 wherein the movement path of the bending
6 movement of the bending regions of wall sections is limited by a mechanical stop when
7 pressurized, wherein the stop is ~~preferably~~ connected to the base element.

8
9 37. (Previously Presented) The device of claim 28 wherein several force-applying elements
10 are connected to a base element each by means of two wall sections.

11
12 38. (Previously Presented) The device of claim 28 wherein several pairs of wall sections,
13 which each apply force with an end region on the base element and with another end
14 region on the force-applying element, are provided between a base element and a
15 force-applying element.

16
17 39. (Currently Amended) The device of claim ~~[[37]]~~ 51 wherein the base element is formed
18 as a ring shape, ~~preferably circular ring shape.~~

19
20 40. (Currently Amended) The device of claim ~~[[37]]~~ 51 wherein the force-applying
21 element~~[[s]]~~ ~~[[are]]~~ is arranged within the base element and preferably defines a circular
22 ring-shaped clamping region.

1 41. (Currently Amended) The device of claim [[38]] 51 wherein the force-applying element is
2 arranged within the base element and is formed as a slotted ring, ~~preferably circular ring~~
3 ~~shape and/or slotted~~.

4
5 42. (Currently Amended) The device of claim [[37]] 51 wherein the pairs of wall sections
6 each lie in a plane and are closely adjacent.

7
8 43. Canceled

9
10 44. (Currently Amended) The device of claim [[43]] 51 wherein an attachment region, which
11 is connected to the corresponding force-applying element or which forms ~~this~~ the
12 corresponding force-applying element, is provided on each end region of the wall
13 sections, and wherein ~~[[the]]~~ a joining region of the wall elements forms another
14 attachment region, which is connected to the base element or forms ~~this~~ the base element.

15
16 45. (Currently Amended) The device of claim [[39]] 51 wherein two ring-shaped sealing
17 elements, which form a common pressure chamber for the ~~pairs of~~ two wall sections, are
18 provided between the wall elements, wherein the ring-shaped sealing elements are held
19 preferably in a sealed manner between ~~[[the]]~~ attachment regions of the wall elements.
20

1 46. (Currently Amended) The device of claim ~~[[37]]~~ 51 wherein a tubular ring element,
2 which forms a common pressure chamber for the ~~pairs of two~~ wall sections, is provided
3 between the bending regions of the wall elements.
4

5 47. (Currently Amended) The device of ~~claims~~ claim ~~[[37]]~~ 51 wherein ~~[[a]]~~ at least one wall
6 element is made from a stack of several partial wall elements ~~preferably formed~~
7 identically.
8

9 48. (Currently Amended) The device of claim ~~[[37]]~~ 51 wherein the base element is formed
10 as an essentially closed, ~~preferably~~ two-part housing, in which the wall elements are
11 received, wherein ~~preferably~~ inner wall sections of the housing limit a maximum bending
12 of the bending regions of the wall sections.
13

14 49. (Currently Amended) The device of claim 48 wherein the ~~ring-shaped, preferably slotted~~
15 force-applying element is ring-shaped and is also held in the housing ~~and guided with~~
16 reference to its radial dimensional changes.
17

18 50. (Currently Amended) A clamping and/or braking device including:

- 19 (a) a base element and a force-applying element, by means of which the generated
20 clamping and/or braking forces can be transferred to an object, as well ~~as at least~~
21 two adjacent wall sections, which each apply force with an end region onto the
22 base element and the force-applying element,

- 1 (b) wherein the two ~~or more~~ adjacent wall sections define an essentially sealed
2 pressure chamber that can be pressurized with pressure or negative pressure,
- 3 (c) wherein the two ~~or more~~ wall sections each have a bending region, which is
4 resistant to tensile force and nevertheless can be bent elastically so that the
5 bending regions form an elastic element between the base element and the
6 force-applying element, and
- 7 (d) in the unpressurized built-in state of the clamping and/or braking device, the two
8 ~~or more~~ wall sections exert a predetermined clamping and/or braking force on the
9 object by means of the force-applying element, and
- 10 (e) wherein the two ~~or more~~ wall sections and their bending regions are shaped and
11 dimensioned, so that from an initial position of the pressure chamber a first
12 pressure applied in the pressure chamber results in an increase in the curvature of
13 the bending regions and reduces the clamping and/or braking forces transferred by
14 the force-applying element to the object, or so that from the initial position of the
15 pressure chamber a second pressure applied in the pressure chamber results in a
16 decrease in the curvature of the bending regions and increases the clamping and/or
17 braking forces transferred by the force-applying element to the object and wherein
18 the second pressure is opposite to the first pressure, and
- 19 (i) ~~so that when the pressure chamber is pressurized with positive pressure, as~~
20 ~~a result of an increase in the curvature of the bending regions, the~~
21 ~~clamping and/or braking forces transferred by the force-applying element~~
22 ~~to the object are reduced or the force-applying element is moved away~~

1 from the base element or when the pressure chamber is pressurized with
2 negative pressure, as a result of a decrease in the curvature of the bending
3 regions, the clamping and/or braking forces that can be transferred by the
4 force-applying element to the object are increased or the force-applying
5 element is moved in the direction towards the base element, or
6 (ii) so that in the reverse conditions, when the pressure chamber is pressurized
7 with negative pressure, as a result of an increase in the curvature of the
8 bending regions, the clamping and/or braking forces that can be transferred
9 by the force-applying element to the object are reduced or the
10 force-applying element is moved in the direction away from the base
11 element or when the pressure chamber is pressurized with positive
12 pressure as a result of a decrease in the curvature of the bending regions,
13 the clamping and/or braking forces that can be transferred by the
14 force-applying element to the object are increased or the force-applying
15 element is moved in the direction towards the base element.
16 (f) wherein the two wall sections are formed by two wall elements, each wall element
17 comprising a ring-shaped, radially slotted plate, and wherein the bending regions
18 are formed at least in the wall element regions between the slots.

1 51. (New) A clamping and/or braking device including:

2 (a) a base element, which is connected rigidly by means of two adjacent wall sections
3 to a force-applying element, by means of which the generated clamping and/or
4 braking forces can be transferred to an object,

5 (b) wherein the two adjacent wall sections define an essentially sealed pressure
6 chamber that can be pressurized with positive pressure or negative pressure,

7 (c) wherein the two wall sections each have a bending region, which is resistant to
8 tensile force and nevertheless can be bent elastically so that the bending regions
9 form an elastic element between the base element and the force-applying element,

10 (d) wherein in the unpressurized built-in state of the clamping and/or braking device,
11 the two wall sections exert a predetermined clamping and/or braking force on the
12 object by means of the force-applying element,

13 (e) wherein the two wall sections and their bending regions are shaped and
14 dimensioned so that from an initial position of the pressure chamber a first
15 pressure applied in the pressure chamber results in an increase in the curvature of
16 the bending regions and reduces the clamping and/or braking forces transferred by
17 the force-applying element to the object, or so that from the initial position of the
18 pressure chamber a second pressure applied in the pressure chamber results in a
19 decrease in the curvature of the bending regions and increases the clamping and/or
20 braking forces transferred by the force-applying element to the object, and
21 wherein the second pressure is opposite to the first pressure, and

1 (f) wherein the two wall sections are formed by two wall elements, each wall element
2 formed as a ring-shaped, radially slotted plate, and wherein the bending regions
3 are formed at least in the wall element regions between the slots.